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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 24

Application Number: 09/083,122
Filing Date: May 22, 1998
Appellant(s): Majeed et al

King L. Wong
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed on 5/25/2000.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the

pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The amendment after final rejection filed on 8/2/2000 has been entered.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 1-2, 5-6 , and 16-17 stands or falls together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

Claims 1-2 and 5-17 contain substantial errors as presented in the Appendix to the brief. Accordingly, claims 1-2, 5-6, and 16-17 are correctly written in the Appendix to the examiner's answer.

(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

3,764,692 Lowenstein 10-1973

Lewis, Y.S. "Isolation and Properties of Hydroxycitric Acid." Method in Enzymology, vol. XIII, 1969, pp. 615-616.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-2 , 5-6, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Y.S. Lewis (Methods in Enzymology; Vol XIII;1969; pages 615-616) in view of Lowenstein (U.S. 3,764,692).

Lewis discloses the preparation of the hygroscopic potassium salts of hydroxycitric acid in which the dried fruit rinds of Garcinia cambogia are cooked in water to be extracted with ethanol, after its filtration, 40% KOH is added to the acidic filtrate to neutralize the mixture, subsequently the oily liquid is washed repeatedly with ethanol, and finally the yellow semisolid is obtained from drying out the oily liquid in vacuo at 80^0 C.(see pages 615-616, method A).

However, Lewis does not teach the process involved in combining extracts at pH 10, refluxing the treated extract to obtain potassium hydroxy citrate, milling, sifting, blending, and packing the dried potassium hydroxycitric acid under nitrogen.

Lowenstein teaches that the hydroxy citric acid (see col. 2, lines 1-4) may be obtained from the garcinia acid lactone by base hydrolysis with potassium hydroxide with heating followed by acidification (see col.1, lines 35-39). Furthermore, hydroxycitric acid can be isolated from " the fruit of Garcinia" (see col. 1 , lines 29-30).

Concerning milling, sifting, blending, and packing the dried potassium hydroxycitric acid under nitrogen, it is well known in manufacturing dried products in the industry to perform these tasks.

With respect to combining extracts at pH 10, refluxing the treated extract to obtain potassium hydroxy citrate, it would have been quite obvious for one having an ordinary skill in the art to extract the dried fruit rinds of Garcinia cambogia three times with ethanol to increase the quantity of the extracted material; furthermore, Lowenstein, the editor of Lewis' work, teaches that the hydroxy citric acid (see col. 2, lines 1-4) may be obtained from Garcinia by base hydrolysis, e.g., potassium hydroxide with heating followed by acidification, which means that it would have been obvious for the one with an ordinary skill in the art to have used Lowenstein's process without acidification in order to produce the non-hygroscopic potassium salts of hydroxycitric acid.

Therefore, if the skillful artisan in the art had desired to employ the whole Garcinia fruit for an economic reason as an alternative to its fruit rind, it would have been obvious to have used Lowenstein's whole fruit as the starting material in the Lewis process to produce the potassium salts of hydroxycitric acid.

(11) Response to Argument

Applicants' argument that there is no motivation to modify the process of Lewis by replacing the fruit rind with the whole Garcinia fruit as the starting material is not persuasive. Lowenstein has described that hydroxycitric acid can be isolated from " the fruit of Garcinia" (see col. 1 , lines 29-30) whereas Lewis has mentioned that the fruit rind of Garcinia cambogia (see page 615 , line 20) is used to isolate hydroxycitric acid. From this, it follows that there is little difference as to the source of hydroxycitric acid.

Therefore, there is a motivation to modify the process of Lewis: if the skillful artisan in the art had desired to employ the whole Garcinia fruit for an economic reason as an alternative to its fruit rind, it would have been obvious to have used Lowenstein's whole fruit as the starting material in the Lewis process to produce the hydroxycitric acid.

Applicants' argument that the purposes of alcohol treatment in the claimed process and Lewis are different is not convinced. The only difference between the Lewis and the claimed process is that Lewis starts with cooking Garcinia fruit rind in water and subsequently the aqueous extraction is conducted with alcohol (see p. 615, lines 20-25) whereas the claimed Garcinia fruit containing water is extracted with alcohol at a reflux temperature. Therefore, the claimed step is nothing more than the optimization of Lewis' process. Furthermore, as indicated in the above, if the skillful artisan in the art had desired to use the whole Garcinia fruit as disclosed in the Lowenstein reference for an economic reason as an alternative to its fruit rind, it would have been obvious to have modified Lewis' process to the direct extraction with

alcohol without cooking Garcinia fruit rind so as to isolate the organic compounds containing hydroxycitric acid.

Applicants' argument that the purpose of adding alcohol to extract hydroxy citric acid in step b) of the claimed process is unexpected from the teachings of Lewis is without merit. The purpose of adding alcohol to the Garcinia fruit is to extract hydroxy citric acid. Lewis shows expressly the addition of alcohol to the filtrate after cooking Garcinia fruit rind in water (see p. 615, lines 20-25). Therefore, if the skillful artisan in the art had a purpose to extract hydroxy citric acid with ethanol as an alternative method to the water extraction due to the solubility of hydroxy citric acid in alcohol, it would have been obvious to have modified Lewis' process to the direct extraction with alcohol without cooking Garcinia fruit rind so as to isolate the organic compounds containing hydroxycitric acid.

Thus, the step b in the claimed process is not unexpected.

Applicants' argument that water, acetone and alcohol do not serve the same purpose in the extraction of hydroxycitric acid , the Examiner has acknowledged that the solvents have different partition coefficients so that the substances extracted with the solvents are not the same. The Examiner merely has pointed out that solvents such as water, acetone and alcohol can be employed in the extraction process of Garcinia fruit as disclosed in the references..

Applicants' argument that treating the alcohol extract with KOH in the claimed process is patentably distinct from treating the aqueous filtrate with KOH in the process is also not persuasive. .

The claimed process is involved in the extraction of the whole fruit containing water with alcohol and subsequently treated the extract with KOH, which is similar to the Lewis process which describes that the dark brown filtrate containing water is concentrated and treated with ethanol, and further treated with KOH. The extraction requires the phase separation into the layers. However, the claimed extraction with alcohol has no phase separation just as in the treatment of the filtrate with alcohol during the Lewis process. This is because the ethanol can be miscible with water. There are no clear patentably distinct steps involved in the claimed process. Furthermore, the applicants had never demonstrated the unexpected results by the side-by-side comparison data between the treatment of the Garcinia fruit with alcohol and the treatment of the filtrate with alcohol as for the production of hydroxy citric acid.

Applicants' argument that the difference of the soluble substances between in water and alcohol gives no motivation of modifying the Lewis process is also not persuasive. Concerning the difference in the solubility between in water and alcohol, applicants's statements are true contingent upon the specifics of the solution system.However, for the case of hydroxy citric acid, hydroxy citric acid can be soluble in both solvents. Therefore, if the skillful artisan in the art had an expectation of a similar success of the alcohol extraction as

disclosed in the water extraction of the Lewis process due to the solubility of hydroxy citric acid in alcohol, it would have been obvious to have modified Lewis' process to the direct extraction with alcohol without cooking Garcinia fruit rind so as to isolate the organic compounds containing hydroxycitric acid.

Applicants' argument that the amount of heat generated by the addition of 40% KOH is less than the application of heat during refluxing is also not persuasive.

The Lewis' process does teach that " the acidic filtrate is neutralized by cautious addition of 40% KOH, with careful stirring. " (see page 615, lines 27-28), which results in the formation of the desired product. This indicates that the addition of 40% KOH to the aqueous filtrate generates a sufficiently excessive heat to perform the reaction to its completion. Furthermore, the applicants do not specify how much heat is applied during refluxing in the claim. Therefore, the amount of heat generated by the addition of 40% KOH is less than the application of heat during refluxing is a very subjective evaluation.

Therefore, it would have been obvious for the skillful artisan in the art to have expected the heat generation step by the addition of 40% KOH to the aqueous filtrate closely equivalent to the refluxing step(e).

Applicants' argument that a precipitate of high pure potassium hydroxy citric acid obtained from only one wash with alcohol in the claimed process is simpler than the 8 times of washings with ethanol to purify the desired product in the Lewis process is also not persuasive.

First of all, applicants do not specify any number of washings in the process and does not specify the purity of the desired product obtained from the process in the claims. The applicants did not show any unexpected results obtained from one wash from the claimed process in comparison with the 8 times of washings from Lewis' process. Furthermore, the applicants' arguments do not take the place of evidence.

Applicants' argument that there is no motivation to modify the laborious Lewis process to arrive at the simple claimed process in the absence of a reasonable expectation of success is also not convincing. It is well-known in the prior art that solvents such as water, and alcohol can be employed in the extraction process of Garcinia fruit. The hydroxy citric acid in Garcinia fruit can be soluble in both solvents. Therefore, if the skillful artisan in the art had an expectation of a similar success of the alcohol extraction as disclosed in the water extraction of the Lewis process due to the solubility of hydroxy citric acid in alcohol, it would have been obvious to have modified Lewis' process to the direct extraction with alcohol without undergoing the laborious cooking Garcinia fruit rind so as to isolate the organic compounds containing hydroxycitric acid.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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January 5, 2001

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